QU EST Aerosols and Atmospheric Chemistry

QUEST Theme 1 Atmospheric Project: QUAAAC

**Aim:** To explore atmospheric chemistry-aerosol-climate linkages with the newly-developed UKCA model

Specific focus on interactions with the biosphere:
- Biogenic VOC emissions
- Secondary organic aerosol formation
- Improved surface deposition (as 2-way exchange)

Project will greatly benefit from interactive land surface scheme

Land Surface Scheme: JULES

WP1: Chemistry
- Complex Chemistry
- Intermediate Chemistry
- Simple Chemistry

WP2: Emissions
- BVOC model development
- BVOC model implementation
- Review other emissions

WP3: Deposition
- New deposition scheme
- O₃, NOₓ, (NH₃, aerosol)
- Testing and Evaluation

WP4: Integration
- GLOMAP aerosol
- BC, OC, Dust, SS, SO₄, NO₃
- New SOA sub-model

Vegetation and soil emissions
2-way exchange with surface

Vegetation, soil, fire, dust, albedo changes, O₃ and NOₓ deposition, VOC emissions, etc.